

CLAIMS

We claim:

1. A decorative laminate panel comprising:
opposing first and second extruded sheets;
one or more compressible objects positioned between the opposing first and second extruded sheets, such that a corresponding natural diameter of the one or more compressible objects has not changed substantially when the opposing first and second extruded sheets are formed together.
2. The panel as recited in claim 1, wherein at least one of the first and second extruded sheets is one of transparent, translucent, and opaque material.
3. The panel as recited in claim 1, wherein the decorative laminate panel has a thickness of between 0.25 and 2 inches.
4. The panel as recited in claim 1, wherein at least one of the first and second extruded sheets comprise extruded PETG having a thickness of between 0.1 inches and 0.50 inches.
5. The panel as recited in claim 1, wherein at least one of the first and second extruded sheets comprise extruded polycarbonate having a thickness of between 0.1 inches and 0.50 inches.
6. The panel as recited in claim 1, wherein at least one of the first and second extruded sheets has a width and length dimensions of approximately 3' x 5', approximately 4' x 8', or approximately 5' x 10'.

7. The panel as recited in claim 1, wherein at least one of the first and second extruded sheets comprises a copolyester that has a melting point between 180° F and 230° F in a pressure range of up to 40 psi.

8. The panel as recited in claim 1, wherein the one or more compressible objects are at least one of thatch, willow reed, bamboo, beans, straw, a tree branch, a tree twig, a bush branch, and a bush twig.

9. The panel as recited in claim 1, wherein a viewable surface of the decorative laminate panel is substantially uniform from one end to the next such that no lakes or air bubbles are exposed.

10. The panel as recited in claim 1, wherein the one or more compressible objects substantially deform at a critical pressure of less than 92 psi, such that the one or more compressible objects are viewed as having an unnatural appearance.

11. The panel as recited in claim 10, wherein the critical pressure is greater than 10 psi, such that the one or more compressible objects are viewed as having an unnatural appearance at the critical pressure.

12. The panel as recited in claim 10, wherein the unnatural appearance comprises a substantially flattened appearance.

13. A process of embedding compressible objects within a decorative laminate panel comprising:

softening a laminate assembly at a first pressure and temperature such that first and second extruded sheets surrounding compressible objects do not crush the compressible objects in a first step;

further softening the laminate assembly at a second pressure and temperature such that the compressible objects become enveloped by the first and second extruded sheets without being crushed in a second step; and

pressing the laminate assembly at a third pressure and temperature.

14. The process as recited in claim 13, wherein the first pressure and temperature comprise a pressure of up to 10 psi and a temperature of up to 300° F.

15. The process as recited in claim 13, wherein the second pressure and temperature comprise a pressure of up to 40 psi and a temperature of up to 350° F.

16. The process as recited in claim 13, wherein the third pressure and temperature comprise a pressure of up to 92 psi and a temperature of up to 360° F.

17. The process as recited in claim 13, wherein the first pressure and temperature comprise a pressure of up to 10 psi and a temperature of up to 180° F.

18. The process as recited in claim 13, wherein the second pressure and temperature comprise a pressure of up to 40 psi and a temperature of up to 230° F.

19. The process as recited in claim 13, wherein the third pressure and temperature comprise a pressure of up to 92 psi and a temperature of up to 240° F.

20. The process as recited in claim 13, further comprising cooling the laminate assembly such that the decorative laminate panel comprises compressible objects in a substantially natural conformation.

21. The process as recited in claim 14, wherein cooling the laminate assembly comprises maintaining a pressure of up to 92 psi while reducing the temperature to as low as 70° F.

22. The process as recited in claim 13, further comprising identifying one or more imperfections viewable from a surface of the decorative laminate panel, and repeating the process such that the imperfections can not be identified.

23. The process as recited in claim 13, further comprising arranging the compressible objects between the first and second laminate panels such that air can escape between the compressible objects when the first and second laminate panels are pressed.

24. The process as recited in claim 13, wherein at least one of the first and second extruded sheets is one of transparent, translucent, and opaque material.

25. The process as recited in claim 13, wherein the decorative laminate panel has a thickness of between 0.25 and 2 inches.

26. The process as recited in claim 13, wherein at least one of the first and second extruded sheets comprise extruded PETG having a thickness of between 0.1 inches and 0.5 inches.

27. The process as recited in claim 13, wherein at least one of the first and second extruded sheets comprise extruded polycarbonate having a thickness of between 0.1 inches and 0.5 inches.

28. The process as recited in claim 13, wherein at least one of the first and second extruded sheets has a width and length dimensions of approximately 3' x 5', approximately 4' x 8', or approximately 5' x 10'.

29. The process as recited in claim 13, wherein at least one of the first and second extruded sheets comprises a copolyester that has a melting point between 180° F and 230° F in a pressure range of up to 40 psi.

30. The process as recited in claim 13, wherein the compressible objects are at least one of thatch, willow reed, bamboo, beans, straw, a tree branch, a tree twig, a bush branch, and a bush twig.

31. The process as recited in claim 13, wherein the one or more compressible objects substantially deform at a critical pressure of less than 92 psi, such that the one or more compressible objects are viewed as having a flattened appearance at the critical pressure.

32. A process of embedding compressible objects within a decorative laminate panel comprising the steps of:

arranging compressible objects between first and second extruded sheets of a laminate assembly such that air can escape between the compressible objects when the first and second extruded sheets are pressed; and

forming the decorative laminate panel about the compressible objects at an appropriate pressure and temperature such that the compressible objects maintain a substantially natural form when the decorative laminate panel has hardened.

33. The process as recited in claim 32, wherein the step of forming the decorative laminate panel comprises:

softening the laminate assembly at the first pressure and temperature such that first and second extruded sheets surrounding compressible objects do not crush the compressible objects in a first step;

further softening the laminate assembly at a second pressure and temperature such that the compressible objects become enveloped by the first and second extruded sheets without being crushed in a second step; and

pressing the laminate assembly at a third pressure and temperature.

34. A laminate sheet assembly for use in a thermosetting process comprising:

a first extruded sheet;

one or more compressible objects arranged against the first extruded sheet such that air is not significantly trapped between the embedded objects, the one or more compressible objects having a critical pressure that is less than 90 psi; and

a second extruded sheet positioned about the one or more embedded objects.

35. The laminate sheet assembly as recited in claim 34, further comprising a pressure pad positioned about one of the first and second extruded sheets.

36. The laminate sheet assembly as recited in claim 34, wherein the first and second extruded sheets extruded PETG sheets.

37. The laminate sheet assembly as recited in claim 34, wherein the first and second extruded sheets extruded polycarbonate sheets.

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